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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SURVILLO, OLEG

ART UNIT	PAPER NUMBER
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2442

NOTIFICATION DATE	DELIVERY MODE
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12/09/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 09/921,936	Applicant(s) RAO ET AL.	
	Examiner OLEG SURVILLO	Art Unit 2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14, 16, 17, 19-33, 35-51, 53-64 and 81-83 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14, 16, 17, 19-33, 35-51, 53-64 and 81-83 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission dated August 14, 2009 has been entered.

Response to Amendment

2. Claims 1-12, 14, 16, 17, 19-33, 35-51, 53-64, and 81-83 remain pending in the application. Claims 1, 6, 14, 16, 17, 19, 26, 33, 35, 42, 49, 53, 58, and 81 are currently amended. Claims 13, 15, 18, 34, 52, and 65-80 have been canceled. Claims 82 and 83 are new.

Response to Arguments

3. With regard to the applicant's remarks dated August 14, 2009:
regarding claim objections, applicant's amendment has been fully considered and is sufficient. Therefore, the objection has been withdrawn.

regarding the rejection of claims 49-51 and 53-64 under 35 U.S.C. 112, first paragraph, applicant's amendment has been fully considered and is sufficient. Therefore, the rejection has been withdrawn.

Regarding the rejection of claims 6, 26, 42, and 58 under 35 U.S.C. 112, second paragraph, applicant's amendment has been fully considered and is sufficient. Therefore, the rejection has been withdrawn.

Regarding the rejection of claims 49-51 and 53-64 under 35 U.S.C. 101, applicant's amendment has been fully considered and is sufficient. Therefore, the rejection has been withdrawn.

Regarding the rejection of claims 1-12, 14, 16, 17, 19-33, 35-51, 53-64, and 81 under 35 U.S.C. 103(a), applicant's arguments have been fully considered, but they are moot in view of the new grounds of rejection.

At point 1), applicants argue that *“the NMS in ILMI Spec does not use the ATM Interface MIB data or the ILMI to map the ATM devices”*.

In response to applicant's argument at point 1), it is noted that ILMI Spec teaches that the ATM Interface MIB data is used for configuration discovery. See page 78 section A.2 Overview, par. 1. Therefore, applicant's argument is not persuasive.

At point 2), applicants argue that *“given that the ATM Interface MIBs in corresponding ATM devices are “already accessible using SNMP via the IMEs” and the third party entity, SNMP proxy-agent, relays requests from the NMP to a corresponding ATM device, the NMS in ILMI Spec would not map the ATM devices”*.

In response to applicant's argument at point 2), it is noted that the limitation of “building a map of entire switches of the network of switches based on accessing each of the other switches” is taught by Crooks, as discussed below under appropriate grounds for rejection.

As to any arguments not specifically addressed, they are the same as those discussed above.

Claim Objections

4. Claims 8, 27, 43, and 60 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claims, or amend the claims to place the claims in proper dependent form, or rewrite the claims in independent form.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-12, 14, 16, 17, 19-33, 35-51, 53-64, and 81-83 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 1, the newly added limitations of acquiring, accessing, and building, as part of “mapping” appear to relate only to mapping of the network of switches since what is built is a map of network of switches. It is unclear whether the same acquiring the address registration information from the router when the message is received at the router from the switch, accessing, and building, performs mapping the network of routers, as required by claim language.

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As to claim 1, it is also unclear whether “accessing the MIB associated with other switches” (emphasis added) suggests that all other switches are sharing the same MIB or each switch has a corresponding MIB of its own.

As to claims 7, 28, 44, and 59, it has been already specified in the corresponding independent claims which device (either router or switch) the message has been received from. Therefore, these claims appear to contradict the express teaching of corresponding independent claims and are, therefore, ambiguous.

As to claims 14 and 16, these limitations are ambiguous because they appear to contradict the express teaching of independent claim 1. In particular, claim 14 further specifies that the LMS configures the network of switches. However, claim 1 specifies that it is the WMS that configures the network of switches and the LMS configures the network of routers instead. Analogous ambiguity exists with respect to claim 16.

As to claims 17, 33, 49, and 81-83, it is unclear whether “accessing the MIB associated with other switches/routers” (emphasis added) suggests that all other switches/routers are sharing the same MIB or each switch/router has a corresponding MIB of its own.

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As to claims 19, 35, and 51, analogous ambiguity exists, as one discussed per claim 14. In particular, claim 17 specifies that the WNS is controlling the switch network. It is unclear how the router network is configured using the same WNS, as per claim 19.

As to claims, 20 and 36, it is unclear how can the address registration information that is acquired from the switch when the message is received at the switch from the router be used to map the switch network from a LMS, as discussed per claim 1, above.

As to claim 81, it is unclear how the step of "configuring the router network using the wide area network management system" is interconnected with other claimed steps. In particular, it appears that configuring is performed regardless of whether appending, sending and mapping is performed or not. Analogously, the step of "configuring the switch network using the local area network management system" appears to be completely unconnected to remaining claim steps. Appropriate correction is required to provide linking between claim steps.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1-12, 14, 16, 17, 19-33, 35-51, 53-64, and 81-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crooks (US 2002/0055988 A1) in view of Non-Patent Literature document titled "Integrated Local Management Interface (ILMI) Specification, Version 4.0" (hereinafter *ILMI Spec*).

As to claim 1, Crooks teaches:

a local area network management system to manage and configure a network of routers (par. [0023], Fig. 1; a TDU unit 150 that maps LAN network. It is noted that "to manage and configure" language indicates intended use in both instances);

a wide area network management system to manage and configure a network of switches (par. [0023], Fig. 1; a TDU unit 150 that maps WAN network. It is noted that "to manage and configure" language indicates intended use in both instances); and

address registration information (configuration information), wherein either the local area network management system or the wide area network management system uses the address registration information in mapping the network of routers and the network of switches by accessing each router in the network of routers and each switch in the network of switches (par. [0025], [0036], [0039]; TDU retrieves configuration data from each of the routers of LAN 104, each of the switches of WAN 102 and each of the routers of LAN 106), wherein the mapping comprises:

acquiring the address registration information from the router (par. [0031]);

accessing the switch using the address registration information (par. [0039]);

accessing the other switches of the network of switches (par. [0037] and [0039]);

and

building a map of entire switches of the network of switches based on accessing each of the other switches (par. [0006]).

Crooks does not show that the address registration information is appended to a message sent between a router of the network of routers and a switch of the network of switches. Crooks further does not show that a management information base (MIB) associated with each of the switches in the network of switches is accessed.

ILMI Spec shows:

address registration information (section 9 at page 60) to be appended to a message (ILMI message) sent between a router (first ATM device) and a switch (second ATM device) (Fig. 1 at page 3) over a connection between the router and the switch (page 1, under section Scope; ILMI communication takes place between adjacent IMEs over physical links or virtual links), wherein either the local area network management system or the wide area network management system (Network Management Station) uses the address registration information to map the network of routers and the network of switches (pages 77-79 section Annex A. Network Management Access to ILMI data) by accessing each router in the network of routers and each switch in the network of switches (page 78 under A.2 Overview, par. 1; confirming the configuration of the ATM interfaces on devices attached to its network), wherein the mapping comprises:

acquiring the address registration information from the router when the message is received at the router from the switch (page 79 par 4; sending a response to the proxy-agent, which in turn sends it to the NMS); and

accessing a management information base (MIB) associated with the switch (page 78 section A.3 The Proxy Approach, par. 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Crooks by appending address registration information to a message sent between a router and a switch, and accessing a management information base (MIB) associated with each of the switches in the network of switches in order to produce an end to end LAN-WAN-LAN topology of the network (par. [0019] in Crooks) and allow for configuration discovery, fault isolation and troubleshooting of devices not directly managed by the NMS (page 78 section A.2 Overview, par. 1 in ILMI Spec).

As to claim 2 (and claims 23, 39, and 55 by extension), Crooks shows that the address registration information comprises an interface index (par. [0028]). ILMI Spec further shows that the address registration information comprises an interface index (section 8.2.2.1 at page 19 and section 9.4.1.1 at page 62).

As to claim 3 (and claims 24, 40, and 56 by extension), Crooks shows that the interface index comprises a slot number from which the message was sent (par. [0021]; identifying each LAN component by configuration information such as a slot number or a port number). ILMI Spec further shows that the interface index comprises the Interface Index object (atmf**PortIndex**) (emphasis added) that identifies a particular physical or virtual interface on the ATM device (section 8.2.2.1 at page 19).

As to claim 4 (and claims 25, 41, and 57 by extension), Crooks shows that the interface index comprises a port number from which the message was sent (par. [0028]). ILMI Spec further shows that the interface index comprises a port number from which the message was sent [Interface Index object (atmf**PortIndex**) (emphasis added) that identifies a particular physical or virtual interface on the ATM device] (section 8.2.2.1 at page 19).

As to claim 5 (and claims 22, 38, and 54), Crooks shows that the address registration information comprises an Internet Protocol address (par. [00028]). ILMI Spec further shows that the address registration information comprises an Internet Protocol address [network prefix] (section 9.4.1.2 at page 63).

As to claim 6 (and claims 26, 42, and 58), Crooks teaches a frame relay network (par. [0001]). Crooks in view of ILMI Spec does not expressly teach the data packet comprises spare bytes. However, it would have been an obvious matter of design choice to include spare bytes in an SNMP or an ILMI message sent between devices in data packets since having spare bytes does not appear to solve a particular problem, nor it is for a particular purpose, and it appears that the method/system/program would function equally well without spare bytes.

As to claim 7 (and claims 27, 43, and 59), ILMI Spec shows that the router sends the message (pages 1-2 under section Scope; page 4 under section 1. ILMI Functions; pages 77-79 section Annex A. Network Management Access to ILMI data).

As to claim 8 (and claims 28, 44, and 60), ILMI Spec shows that the switch sends the message (pages 1-2 under section Scope; page 4 under section 1. ILMI Functions; pages 77-79 section Annex A. Network Management Access to ILMI data).

As to claim 9 (and claims 29, 45, and 61), ILMI Spec shows that the message is an enhanced local management interface message [ILMI message] (pages 1-2 under section Scope; page 4 under section 1. ILMI Functions; pages 77-79 section Annex A. Network Management Access to ILMI data).

As to claim 10 (and claims 30, 46, and 62), ILMI Spec shows that the message is sent when the network of switches and the network of routers are first configured (sections 9.2.1 to 9.2.6 at page 61; section 9.3 General Description of Procedures at page 62).

As to claim 11 (and claims 31, 47, and 63), ILMI Spec shows that the message is sent when the network of switches and the network of routers has a change in configuration (sections 9.2.1 to 9.2.6 at page 61; section 9.3 General Description of Procedures at page 62).

As to claim 12 (and claims 32, 48, and 64), ILMI Spec shows that the message is sent at a regular interval (sections 9.2.1 to 9.2.6 at page 61; section 9.3 General Description of Procedures at page 62).

As to claim 14, ILMI Spec shows that the local area network management system configures the network of switches [performing configuration discovery, fault isolation and troubleshooting. See page 78, first paragraph in ILMI Spec] (as discussed per claim 1 above).

As to claim 16, ILMI Spec shows that the wide area network management system configures the network of routers [performing configuration discovery, fault isolation and troubleshooting. See page 78, first paragraph in ILMI Spec] (as discussed per claim 1 above).

As to claim 17, Crooks teaches:
address registration information (configuration information) (par. [0017]); and
mapping, using the address registration information, the router network at a wide area network management system controlling the switch network (par. [0025], [0036], [0039]; TDU retrieves configuration data from each of the routers of LAN 104, each of the switches of WAN 102, and each of the routers of LAN 106), wherein the mapping comprises:

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acquiring the address registration information from the switch (par. [0039]);
accessing a management information base (MIB) associated with the router
using the address registration information (par. [0027]);
accessing the MIB associated with other routers of the router network using the
MIB associated with the router (par. [0036]); and
building a map of entire routers of the network of routers based on accessing
each of the other routers (par. [0006]).

Crooks does not show that the address registration information is appended to a
message sent between a router of the network of routers and a switch of the network of
switches.

ILMI Spec shows:

appending address registration information (section 9 at page 60) to a message
[ILMI message];
sending the message between a router [first ATM device] and a switch [second
ATM device] (Fig. 1 at page 3) [ILMI communication takes place between adjacent IMEs
over physical links or virtual links] (page 1, under section Scope).

It would have been obvious to one of ordinary skill in the art at the time of the
invention to combine the teachings of ILMI Spec and those of Hanaki in order to perform
cooperation between LAN and WAN at the network management level and end-to-end
connections management over the whole network by using connection information from
both LANs and WANs (Hanaki, page 13 under section 1. Introduction).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Crooks by appending address registration information to a message sent between a router and a switch in order to produce an end to end LAN-WAN-LAN topology of the network (par. [0019] in Crooks) and allow for configuration discovery, fault isolation and troubleshooting of devices not directly managed by the NMS (page 78 section A.2 Overview, par. 1 in ILMI Spec).

As to claims 19, 35, and 51, ILMI Spec shows configuring the router network using the wide area network management system, as discussed per claim 16.

As to claims 20 and 36, Crooks and ILMI Spec show using the address registration information to map the switch network from a local area network management system controlling the router network, as discussed per claim 1.

As to claims 21, 37, and 53, Crooks and ILMI Spec shows configuring the switch network using the local area network management system, as discussed per claim 14.

As to claim 33, Crooks and ILMI Spec discuss a computer implemented method and system as discussed per claims 1 and 17. Thus, Crooks in view of ILMI Spec teaches a machine-readable storage medium embodying a sequence of instructions executable by a machine to perform the method steps, as discussed per claim 17 (par. [0045] in Crooks).

As to claim 49, Crooks in view of ILMI Spec teaches a memory to store address registration information (par. [0042] in Crooks); means for appending the address registration information to a message; means for sending the message between a router of a router network and a switch of a switch network, as discussed per claim 17; and means for mapping, using the address registration information, the switch network from a local area network management system controlling the router network, as discussed per claim 1.

As to claim 50, Crooks in view of ILMI Spec shows using the address registration information to map the router network from a wide area network management system controlling the switch network, as discussed per claim 1.

As to claim 81, Crooks in view of ILMI Spec shows:

- appending address registration information to a message (as discussed per claim 17);
- sending the message between a router of a router network and a switch of a switch network (as discussed per claim 17);
- mapping, using the address registration information, the router network at a wide area network management system controlling the switch network (as discussed per claims 1 and 17);

configuring the router network using the wide area network management system (as discussed per claims 16 and 19);

mapping, using the address registration information, the switch network at a local area network management system controlling the router network (as discussed per claims 1 and 20), wherein the mapping the switch network at the local area network management system comprises: acquiring, accessing, and building, as discussed per claim 1; and

configuring the switch network using the local area network management system (as discussed per claims 14 and 21).

As to claim 82, Crooks in view of ILMI Spec shows a local area network management system to control a router network, the local network management system operable to acquire, access, and build, as discussed per claim 1 above. It is noted that claim language “to control”, “to acquire”, “to access”, and “to build” suggests intended use. Applicants are advised to positively recite “controlling”, “acquiring”, “accessing”, and “building”.

As to claim 83, Crooks in view of ILMI Spec shows acquiring, accessing, and building, as discussed per claim 1 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG SURVILLO whose telephone number is (571)272-9691. The examiner can normally be reached on M-Th 8:30am - 6:00pm; F 8:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Oleg Survillo

Phone: 571-272-9691

/Faruk Hamza/
Examiner, Art Unit 2455